Dronacharya Group of Institutions, Greater Noida Electrical & Electronics Engineering Department

Question Bank

Subject: Power Electronics (NEE-502)

Branch: EEE 5th Semester

- 1. What are the different methods to turn on the thyristor?
- 2. Define latching current.
- 3. Define holding current.
- 4. What is a snubber circuit?
- 5. Why IGBT is very popular nowadays?
- 6. What is the difference between power diode and signal diode?
- 7. What are the advantages of GTO over SCR?
- 8. What losses occur in a thyristor during working conditions?
- 9. Draw the two transistor model of SCR and derive an expression for anode current.
- 10. Explain the characteristics of SCR.
- 11. Describe the various methods of thyristor turn on.
- 12. Explain the operation of MOSFET and IGBT.
- 13. What is the function of freewheeling diodes in controlled rectifier?
- 14. What is commutation angle or overlap angle?
- 15. What are the advantages of six pulse converter?
- 16. What is meant by commutation?
- 17. What are the types of commutation?
- 18. Mention some of the applications of controlled rectifier.
- 19. What are the different methods of firing circuits for line commutated converter?
- 20. What is meant by natural commutation?
- 21. What is meant by forced commutation?
- 22. Describe the working of 1 ϕ fully controlled bridge converter in the Rectifying mode and inversion mode. And derive the expressions for average output voltage and rms output voltage.
- 23. Describe the working of 3 ϕ fully controlled bridge converter in the Rectifying mode and inversion mode. And derive the expressions for average output voltage and rms output voltage.
- 24. Describe the working of Dual converter.
- 25. Derive the expressions for average output voltage and rms output voltage of 1 φ semiconverter.
- 26. What is meant by dc chopper?
- 27. What are the applications of dc chopper?
- 28. What are the advantages of dc chopper?
- 29. What is meant by step-up and step-down chopper?

- 30. What is meant by duty-cycle?
- 31. What are the two types of control strategies?
- 32. What is meant by TRC?
- 33. What are the two types of TRC?
- 34. What is meant by PWM control in dc chopper?
- 35. Describe the principle of step-up chopper. Derive an expression for the average output voltage in terms of input dc voltage & duty cycle.
- 36. Describe the working of four quadrant chopper.
- 37. Explain the working of current commutated chopper with aid of circuit diagram and necessary waveforms. Derive an expression for its output voltage.
- 38. Explain the working of voltage commutated chopper with aid of circuit diagram and necessary waveforms. Derive an expression for its output voltage.
- 39. What is meant by inverter?
- 40. What are the applications of an inverter?
- 41. What are the main classification of inverter?
- 42. Why thyristors are not preferred for inverters?
- 43. Give two advantages of CSI. 6. What is meant a series inverter?
- 44. What is meant a parallel inverter? 8. What are the applications of a series inverter?
- 45. What is meant by McMurray inverter?
- 46. What are the applications of a CSI?
- 47. What is meant by PWM control?
- 48. What are the advantages of PWM control?
- 49. Describe the operation of series inverter with aid of diagrams. Describe an expression for output frequency, current and voltages. What are the disadvantages of basic series inverter?
- 50. State different methods of voltage control inverters. Describe about PWM control in inverter.
- 51. Explain the operation of 3 ϕ bridge inverter for 180 degree mode of operation with aid of relevant phase and line voltage waveforms.
- 52. What does ac voltage controller mean?
- 53. What are the applications of ac voltage controllers?
- 54. What are the advantages of ac voltage controllers?
- 55. What are the disadvantages of ac voltage controllers?
- 56. What are the two methods of control in ac voltage controllers?
- 57. What is the difference between ON-OFF control and phase control?
- 58. What is meant by cyclo-converter?
- 59. What are the two types of cyclo-converters?
- 60. What is meant by step-up cyclo-converters?
- 61. What is meant by step-down cyclo-converters?
- 62. What are the applications of cyclo-converter?